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Clean city politics: an urban political ecology of solid waste in West Bengal, India

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Abstract:

Solid waste management is often perceived as one of the most pressing environmental problems facing local governments in urban India and elsewhere in the global south. However, solid waste is not simply a managerial problem but is in many ways a highly political issue that involves diverse political actors at different scales. Particularly at the local level, solid waste management can also be a key part of broader political strategies, acting through its unique materiality as an environmental artefact and social relic. In this paper, we use an urban political ecology approach to examine a recent segregation-at-source project in a small town of West Bengal as a lens to understand more general multi-scalar, socio-political urban processes. Drawing primarily upon qualitative field research, the paper shows how diffuse forms of power and different governmentalities were applied between and within state-level government agents, municipal authorities, local waste workers and neighbourhood communities to implement and (re)shape this project. The research points to the complexity of urban environmental governance and everyday politics in which action repertoires ranging from threats, creation of environmental and hygienic subjects, moral appeals and economic rationality, underpinned by the harmful character of waste and by sociocultural imaginaries thereof, (re)produced uneven political ecologies of waste between and within different neighbourhoods of the city.

Keywords: Solid Waste Management, Environmental Governance, Urban Politics, Urban Political Ecology, small cities, India

Introduction

Garbage is political. Its presence or absence marks spaces and times in particular ways. Solid waste can also be the material of politics: how and where it is handled and disposed can be part of the strategies of political actors (Moore, 2009). Throughout our fieldwork in small cities of West Bengal, the political nature of garbage was vividly marked. In one case, the day before municipal elections, we observed an official making a series of calls to his staff, giving each orders to clean particular areas of the city. Each conversation was punctuated with “a

garbage free city", interjected forcefully in English amidst an otherwise Bengali dialogue. In another city, a recently elected municipal councillor detailed plans to clean up particular main roads that are visible and the object of popular complaints. An increase in road clearing from one to two times a day would be made possible by shifting sweepers from other areas of the municipality. Both of these initiatives were about more than solid waste management (SWM) in a purely technical-organisational sense. Rather, one must see them as part of political strategies to build political capital and form an image of a proactive, effective political actor. Conversely, strategies to manage garbage and create a clean city can also be risky for those concerned with their political "popularity" when initiatives are not welcomed by the electorate.

This paper explores the political pressures and incentives related to the collection, removal, and treatment of garbage in the context of urban India. In particular, it examines the politics of the implementation of a segregation-at-source SWM project in the small city of Medinipur, West Bengal, using an approach of urban political ecology (UPE) that focuses on the multiple embedded political strategies and relationships that shape the governance of solid waste (hereinafter waste). We explore the manner in which local political actors deploy multiple normative registers within their practices of securing household compliance. Finally, we highlight how particular situated intersectionalities between actors shape both the implementation and experience of solid waste governance. More generally, this case study on SWM serves as a lens through which we can begin to tease out the complexities of environmental governance and the (re)production of urban political ecologies.

Toward an Urban Political Ecology of Solid Waste

The politics of waste in cities of the global south have been explored within a growing body of contemporary research (Bjerkli, 2013; Fahmi and Sutton, 2006; Gill, 2009; Moore, 2009; Myers, 2014a; Shinoda, 2005). These cases have highlighted the complex networks of actors involved with SWM and the ways that waste is enrolled in broader urban political strategies. Through the examination of "the dirty politics of inclusion and exclusion associated with waste" (Myers, 2014b: 448) political and governance processes are explored. Moore (2009) for example, highlights how in Oaxaca waste has been enrolled into the opposing political strategies of residents and city officials. Numerous authors have examined the effects of

neoliberalism and 'good governance' agendas in Africa through changes to the SWM system (Bjerkli, 2013; Fahmi and Sutton, 2006; Miraftab, 2004; Myers, 2005). In doing so they have effectively demonstrated that urban service delivery is embedded in multiple structures of power, is subject to multi-scalar forces and can be used by power holders to re-enforce their positions.

In order to explore the complexity of solid waste politics, we use UPE, an approach that not only allows to explore multi-scalar networks and power relationships but also sets these in relation to ecological processes and resources characteristics.

Urban Political Ecology

UPE as a conceptual framework[1] forwards that the reproduction of society and nature are mutually constitutive (Swyngedouw 1997). As such urban socio-environments are the "outcome of networks of relationships and processes operating at different geographical scales" (Bjerkli, 2015: 20). Consideration should be given to the role of power in wider political-economic processes (Heynen, 2003) and to the "specific resource characteristics and ecological processes that influence particular urban socioenvironments" (Véron, 2006: 2095). UPE research has demonstrated that, as well as examined how, the environment and natural resources become enrolled in urbanisation processes and in networks of power at multiple-scales.

Heynen (2014) suggests that UPE is distinguished by two (broad) approaches. Classical Marxist-oriented UPE examines and critiques the manner in which 'nature' becomes enlisted in urbanisation processes under neoliberal capitalism. A so called 'second wave' of UPE adopts more post-structural approaches to move the analysis beyond class and capital towards issues of agency across complex networks of actors who (re)produce (uneven) urban socio-natures. Some authors ascribing to this approach seek to "situate" UPE through an engagement with the everyday that is rooted in local contexts and identities (Lawhon et al 2015). Such a situated UPE, which inspires this paper, often follows a more Foucauldian understanding of power as diffuse and relational. Thus power is understood to be emergent

[1] For excellent reviews of the field see: Zimmer, 2010 and Hynen, 2014.

and enacted, existing only through practices (Foucault, 1982). Such a perspective focuses on the dispersed practices and the relationships between state and non-state actors that result in everyday forms of control (Bjerkli, 2015; Cornea et al., forthcoming; Ekers and Loftus, 2008). Furthermore, a situated UPE also attempts theory building from the global south, thus expanding the perspective through diverse urban experiences (Lawhon et al., 2014; Truelove, 2011; Zimmer, 2010; Zimmer, 2015).

Researchers utilising (Marxist or post-structuralist) UPE approaches have focused their attention on particular 'natural' resources or urban environmental services, their uneven consumption and provision, as well their political use as instruments of control and power depending on their material biophysical properties. For example, a large number of studies examined urban political ecologies of piped water (e.g.: Bakker, 2013; Kaika, 2003; Swyngedouw, 2005), green spaces (Heynen, 2003; Heynen et al., 2006) and food (Alkon, 2013; Parés et al., 2013). By contrast, environmental externalities, such as solid waste or pollution, have received significantly less attention in UPE (Véron, 2006); though recent engagement with waste-water and sanitation (Desai et al., 2015; Karpouzoglou and Zimmer, 2016), as well as with solid waste (see below), is beginning to address this gap.

An everyday Urban Political Ecology of waste

The emerging UPE studies on solid waste point to the value of waste as an entry point into explorations of urban politics and power relations inherent in the (re)production of uneven urban socio-natures. While relatively limited in number, this literature explores a diverse range of experiences including: the governance of waste and its connection to neoliberalism (Myers, 2005) and the (capitalist) metabolism of cities (Lawhon, 2012; Njeru, 2006; Pickren, 2014); the opposition to waste-to-energy projects (Demaria and Schindler, 2016); environmental justice issues—largely related to landfills (Baabereyir et al., 2012; Leonard, 2012); and issues of social justice, in particular as they concern waste workers (Bjerkli, 2015; Hartmann, 2012; Parizeau, 2015; Yates and Gutberlet, 2011). These studies underline the analytical value of understanding waste as a socio-natural hybrid, both material and sociocultural, both an environmental artefact and a social relic (Parizeau, 2015). Waste is "imbued with cultural value" (Parizeau, 2015: 68) and the product of economic and social forces (Hartmann, 2012); choices regarding where to place it, how to manage it and who

should handle it are not politically neutral (Baabereyir et al., 2012; Demaria and Schindler, 2016; Leonard, 2012). This work further highlights the complex and ambiguous nature of solid waste in cities of the global south, as it is at one and the same time a desired good with value and part of diverse livelihood strategies as well as the object of repulsion, a risk to health and wellbeing (Demaria and Schindler, 2016).

While this literature demonstrates that the governance of waste is not politically neutral, they have largely examined the exceptional. Focus has been on particular types of waste, such as e-waste (Lawhon, 2012; Pickren, 2014) or plastic bags (Njeru, 2006), and on cases of gross injustices and/or protest (Baabereyir et al., 2012; Gill, 2009; Hartmann, 2012; Leonard, 2012; Parizeau, 2015). While these cases are undoubtedly important, they may draw attention away from the mundane ways through which power shapes the everyday production of particular socio-natural conditions. We argue that UPE (of waste) should pay more attention to the politics of everyday, ordinary and not openly contested socio-natures (Rattu and Véron, 2016; Robbins, 2007). While other UPE studies, often of water, have demonstrated the analytical value of exploring everyday practices at the level of households and differentiated local distribution networks (see for example: (Desai et al., 2015; Loftus, 2007; Truelove, 2011; Silver, 2016; Swyngedouw, 1997), until now the mundane politics of ordinary garbage at this scale has remained under-explored (Yates and Gutberlet (2011) and Bjerkli (2015) are notable exceptions). In this paper we seek to broaden the analysis enabled by such engagement through an examination of the politics the implementation of a segregation-at-source project. Thus, we focus on the "everyday practices and processes in which power in its various forms is exercised and negotiated at various scales, as well as exploring the how this affects the service provided"(Bjerkli, 2015: 20).

Urban Environmental Politics in India

In recent years numerous authors have examined how the environment has become enrolled in the divisive politics that marks many of India's metropolises.[2] In the wake of liberalisation

[2] There are only limited studies on environmental politics in smaller cities in India (Cornea et al, forthcoming; Berenschot, 2010; Zimmer et al, 2016). However, these studies have highlighted on the one hand the fundamental connectedness of such cities to a "multiple elsewhere" (Mbembe & Nuttal, 2004:348 in Zimmer et al, 2016) and on the other hand the

and an increasing push to make such cities economic powerhouses (Upadhyaya, 2014) the environment and environmental problems have become the focus of governance by state and non-state actors (Follmann, 2015b; Mawdsley, 2003; Upadhyaya, 2014). Particularly attempts to renew cities and make them 'world class' urban environments have become an integral part of a re-imagining of urban India (Fernandes, 2004; Follmann, 2015b; Ghertner, 2011). Firmly embedded within the political economy of post-liberalisation India, these processes have had a distinctly classed nature (Fernandes, 2004). Baviskar (2003) coined the term 'bourgeois environmentalism' to encapsulate the tryptic constellation between middle and upper class desires for a 'clean and green' Delhi, with the need for land by commercial capital, and the state's imperatives of urban economic growth, which resulted in the displacement of and further political marginalisation of the poor. Bhan (2009) has similarly explored how notions of cleanliness and pollution, often advanced through Public Interest Litigation, have been used to displace the poor. While recent scholarship has complicated the dualist class-based narratives around environmental politics and activism in India (Demaria and Schindler, 2016; Follmann, 2015a) it remains the case that Indian cities are characterised by highly uneven, differentiated urban political ecologies (Cornea et al., forthcoming; Desai et al., 2015; Truelove, 2011; Véron, 2006; Zimmer et al., 2016).

In India solid waste and waste-based work are furthermore imbued with particular socio-cultural meanings[3] that intersect with the broader political-economic factors that shape how it is managed. Particularly in the metropolises, such as Delhi, SWM has been the subject of public interest litigation resulting the formation of various expert committees (Gidwani, 2013), but also of protest over proposed solutions to waste management such as incineration (Demaria and Schindler, 2016). Attempts to privatise or otherwise reform SWM, are often predicated on valuing waste as resource (materials, energy, etc.), but they have largely ignored the livelihoods need of poor and informal waste workers (waste pickers, recyclers, etc.) (Gidwani, 2013; Gill, 2009; Shinoda, 2005). The disregard for the needs of informal

need to take the particularities of the complex, constitutive power relations of such cities seriously.

[3] Here I focus on solid waste and not on human waste. While all types of waste are subject to ideas of ritual pollution and particular colonial histories, human waste has distinct characteristics not discussed here (see for example Doran & Raja, 2015).

workers is connected to broader narratives around informality and notions of (urban) citizenship (Chatterjee, 2004; Truelove and Mawdsley, 2011). Yet, while it may be valued as a resource within neoliberal governance strategies, solid waste is also associated with the socio-cultural ideas of purity and pollution that mark caste-based societies. This is particularly the case vis-à-vis the household, where housekeeping is reflective of a particular morality and the auspicious, "Lakshmi-like nature" of the female homemaker; conversely spaces outside of the home were not traditionally subject to a set of communal rules (Chakrabarty, 2002: 69). Thus waste takes on the nature of something which is both of value and inauspicious, the presence of which carries (im)moral connotations and threatens the hygienic spaces of "responsible citizens committed to the regime of cleanliness and hygiene" (Doron and Raja, 2015: 195).

Methods

This paper draws upon a total of 9.5 months of fieldwork during 2013-2014 conducted by the first author in West Bengal as part of larger research project on environmental governance and politics. A total of 38 unstructured interviews, most with small groups of 2-6 people, were conducted in Medinipur, a sub-set of 16 focus specifically on solid waste management. These interviews were primarily conducted in Bengali and translated by an assistant. A broad range of actors where interviewed including: municipal employees, elected officials, former ward committee members, union representatives, and local residents. Ethnographic observations, research on solid waste in other field sites, and a household survey further inform our understanding of the politics of waste in Medinipur. Qualitative data was recorded in the form of field notes, a field diary, and transcribed interviews. This data was coded in order to aid analysis. A review of secondary documents further informs analysis. Direct quotes presented within the text have been translated from Bengali unless otherwise indicated.

Context: Solid Waste Management in India, West Bengal and the small city of Medinipur

While the day-to-day practices of SWM are the responsibility of urban local bodies (ULBs) in India, a number of central policies and agencies guide these actions. The most salient at the time of research was the *Municipal Solid Waste Management and Handling Rules, 2000,* and the *Manual on Municipal Solid Waste Management and Handling* (2000), which guides the implementation of these rules. These two documents mandate the collection of waste from

all areas, including slums and squatter areas, its segregation at source and the treatment of organic waste through bio-degradation (Ministry of Urban Development, 2000; Ministry of Environment and Forests, 2000). Enforcement of the centrally mandated policies and rules is the responsibility of the state-level Pollution Control Boards.

The statutory landscape around SWM is further complicated by its inclusion as a focus area within numerous centrally funded schemes. However, while such schemes were in the recent past very influential within the (environmental) politics of large urban centres (ie: Anand, 2011; Roy, 2014), small and medium sized cities received far less funding (Véron, 2010). Furthermore projects sanctioned under schemes for such cities (such as the Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT)) were largely focussed on water supply, roads and drainage. As such as of March 2014 SWM projects only accounted for 6% of all UIDSSMT projects and less than 2% of the total approved costs (Ministry of Urban Development Government of India, 2014). These schemes are notable in the ways that both shape the funding landscape, but are also reflective of broader narratives on development priorities and the place of particular cities within the urban order in India.

In West Bengal, as elsewhere, SWM falls under the purview of a range of state-level line agencies including the West Bengal Pollution Control Board, the Department of Municipal Affairs, the State Urban Development Agency (SUDA) and the Directorate of Municipal Engineering. In addition to the central schemes detailed above, state level schemes are also concerned with SWM. For example, the Solid Waste Management Mission, established by the Municipal Affairs Department, was intended to coordinate a programme of improved SWM in all ULBs. However, official's report that it has failed to function, in part due to the limited financial and technical capacity of ULBs (Department of Municipal Affairs, 2010). This complex statutory governance regime means that municipal officials must navigate various sources of funding, policy directions, and priority areas of higher levels of government when making decisions about what is in theory a municipal matter.

Medinipur is one of many small cities in West Bengal faced with rather typical SWM problems. It is the district capital of Paschim Medinipur and has a population of approximately 169,000. It typifies Bell and Jayne's (2009) definition of a small city; that is, limited not only in size but

also in influence and reach. This lack of influence and capacity to garner attention is reflected in the very limited investment in the city through government sponsored schemes.

While there is a local middle class, there is no evidence of the type of bourgeois environmentalism (Baviskar, 2003) and displacements of the poor that are often seen in India's large centres (e.g. Bhan, 2009; Ghertner, 2012). Moreover, there is very little of the green messaging (i.e., signs entreating people to keep the city clean and green) that one so often sees in public places in larger cities such as Kolkata. In light of these conditions the deployment of narratives that seek to construct environmental subjects, as discussed below, is particularly notable.

The municipality employs more than 350 people for conservancy work, a term which refers to tasks related to waste including but not limited to garbage and human waste. This includes sanitary inspectors, supervisors, sweepers and other staff. In 2013-2014 the budget estimate for conservancy services was 22% of Medinipur's total revenue expenditure (Midnapore Municipality, 2013b: 8 - 10). However, collection efficiency varies from 60% to 90% between wards (Midnapore Municipality, 2008: 113). Our survey largely verifies these estimates, with 36% of respondents reporting that their waste is not put in a community bin or collected door-to-door by the municipality;[4] these respondents say they throw it "somewhere else". Further, door-to-door removal of solid waste is a class-biased service: 42% of middle-class respondents versus only 18% of poor respondents reported the same. Collected waste is deposited centrally into covered community bins that are emptied periodically. The waste is then transported in open vehicles to an unmanaged dumping ground at the city's outskirts. While one councillor described the SWM system in English as being "not so hi-fi", it does show elements of innovation, such as the mandatory use of covered bins by certain businesses, beyond what was observed elsewhere.

Case study: Politics, power and ecology of waste segregation at source in Medinipur

In one of Medinipur's twenty-five wards a pilot project of segregation at source and door-to-door collection was implemented in 2013. There, the municipality provided households two

[4] Our survey excluded the ward where the segregation-at-source pilot project is running.

plastic buckets, one each for organic and non-organic waste. Garbage collection occurs in the morning when a worker comes with a handcart fitted with barrels for each type of waste. These are emptied separately into covered bins on wheels and later brought to the landfill to be emptied. Local residents are required to pay monthly for this door-to-door collection at a rate of INR 10 (USD 0.15) from poor and below poverty line households, and INR 20 (USD 0.30) from other houses. The segregated organic waste was used in a vermiculture pilot project developed as a public-private partnership, but this project was abandoned due to economic and technical problems. In spite of this, the municipality still encourages the practice of segregation at source; however, both types of waste are dumped together at the landfill. The municipality intends to implement the same system in other wards.

The partial success of this pilot project is remarkable given the general resistance in India to waste segregation at source (Colon and Fawcett, 2006; Gupta and Gupta, 2015) and the failure in 2011 of a similar project in Medinipur based on a public-private partnership. Examining the processes through which this policy experiment was initiated and implemented serves to illuminate the power negotiations that shape the political economy of environmental governance in West Bengal.

Overcoming political disincentives: Initiating a state mandated project

The initiation of this pilot project points to the complexity of multi-scalar power dynamics and the multiplicity of relationships related to SWM. Interviews with local civil servants, the former ward councillor and former members of the ward committee[5] (who held their posts until 2013) revealed that the segregation-at-source project was introduced in response to

[5] Under the system of decentralized governance in West Bengal, all electoral wards have a municipal councilor who are key representatives of the state to the residents of their wards. In Medinipur residents are more likely to approach a councillor or other political actors rather than a bureaucrat with problems or concerns about civic services.In West Bengal, the municipal councilor is responsible for appointing a non-remunerated ward committee, whose size is determined by the population of the ward. The ward committee, if functioning, acts as a consultative body. As per the state rules, councilors are encouraged to appoint the “proper representation of engineers, physicians, educationists, social workers, cultural activists, sports-persons, women, persons from economically backward section of society” (Government of West Bengal, 2001) A respondent further indicated that normally councilors appoint at least one state government employee.

pressure from state-level officials. A respondent related that municipal officers had attended a general monitoring meeting in Kolkata with SUDA in 2013. At this meeting SUDA officials came to know by chance that no SWM scheme had been implemented in Medinipur in response to the *Municipal Solid Waste Management and Handling Rules*. The municipal civil servants were warned that they risked having funds under UIDSSMT cut off if they did not begin to implement a SWM scheme.

This event illuminates two important elements of the political economy of governance in West Bengal. First, state officials have a significant scope of influence over local government officers. The state-level bureaucrats were able to use the threat of sanctioning funds for other projects in order to motivate compliance with SWM policy objectives. Secondly, it demonstrates the limited autonomy of ULBs in West Bengal. While SWM is in theory the responsibility of ULBs, in practice it is at the level of the state that policy choices are made. Discussions with a state-level bureaucrat confirmed this observation. According to him, it is most often the Pollution Control Board and not the ULB who identifies projects related to the environment.

When the municipal officers returned back from the Kolkata meeting, they felt compelled to initiate a SWM scheme and looked for a ward to implement a pilot project. They decided to approach Debasish Roy,[6] a local state government employee and ward committee member, who stepped in as acting councillor for a period of over a year following the death of the elected officeholder in 2012. When confronted with the idea of a segregation-at-source project in his ward, Mr Roy said to himself: “I am a government employee, so I have no risk to decrease my popularity, I have no fear”. Thus, perceiving no risk to his livelihood from a potentially unpopular scheme he was willing to implement it. While he was a long-term member of the ward committee (five terms), he was not elected and had no political-electoral ambitions. Thus, he did not need to ensure future votes and so he was unconcerned with “popularity” or more accurately with populism. Further, as a permanent government employee he would not have been concerned about losing the councillor’s stipend.

[6] Debasish Roy is a pseudonym

Mr Roy also asserted, and municipal employees concurred, that concerns about populism were a significant reason that the elected councillors were reluctant to introduce the scheme previously or in elsewhere since. These concerns speak to the nature of electoral politics and that at times good policy can have bad electoral outcomes if it proves unpopular. Post et al (2003) note that in Hyderabad no cost-recovery was pursued for SWM or even openly discussed as the political cost was deemed to be too high. User fees are a contentious issue for all classes of people (Colon and Fawcett, 2006). This concern for 'popularity' may also explain why the councillor elected in November 2013 has actively distanced himself from the scheme by making the new ward committee responsible for supervising workers and handling any complaints.

These initial decisions on implementing a pilot project, and the choice of where it should be implemented, begin to highlight how socio-natural objects are enrolled into and (re)produced through multi-scalar networks of relationships and politicised processes (Bjerkli, 2015). In this case the driving impetus to implement the project was not a desire for better SWM, nor was it inspired by elite environmentalism and protest, as has occurred in the metros (see: Gidwani 2013, Baviskar 2003) but rather it was a locally felt obligation imposed by higher levels of government threating with (unrelated) funding cuts. This also highlights the manner in which socio-natures may be enrolled within political strategies in indirect ways – stated another way, SWM is not always about garbage. Moreover, this initial part of the case study begins to demonstrate the complex multi-scalar relationships of power that shape urban political ecologies. Here, representatives of the state at multiple scales (state and local), whose power and legitimacy is based on different factors (as bureaucrats and as an unelected representative) each enact power in different ways that ultimately enabled the implementation of this project.

Overcoming local resistance: Achieving 'buy-in' from labour

Implementing the scheme also required 'buy-in' from other actors, including from the labour union, who represents municipal conservancy workers, and from local households. A previous attempt to outsource door-to-door garbage collection to an NGO and impose user fees in another ward of Medinipur had resulted in a two-week strike by the union in 2011. The union had opposed that plan on a number of fronts. First, the NGO had proposed that they would

provide labour themselves, bypassing the unionized workers. Secondly, predicted income for workers was very low. It was set at 25% of fees collected, estimated to be INR 40-50 (USD 0.60 -0.70) per day. The union saw this amount as "inhumane" and requested at least INR 100 (USD 1.50) per day, the wage rate for unskilled labour under the Urban Wage Employment scheme at the time (Department of Municipal Affairs, 2010). Further, the private actor proposed that the workers themselves would be responsible for collecting the user fees. The union felt this bound the mostly poor and low-caste workers to a difficult system of being responsible to force people to pay. The union rejected this proposal, demanding higher wages and the employment of separate people for the collection of fees. With these demands, the union went on strike.

In West Bengal (as elsewhere in India), strikes led by (often politically affiliated)[7] unions are a common tactic and thus represent a well-trodden path to assert demands, particularly for members of lower-classes and castes. Labour unions in other parts of India have similarly opposed plans to privatise municipal services (Post et al., 2003: 843). This particular strike in Medinipur was successful and the privatisation scheme was called off. The reason why garbage strikes are often politically effective lies in their ability to render waste hyper-visible and offensive to upper and middle-class sensibilities (Moore, 2009). In doing so, marginalised waste workers are able to garner support for political demands (also Hartmann, 2012). In Medinipur too, the union was able to at least temporarily offset the marginalised position of their members pointing to the nature of power as enacted and not inherent (Foucault 1982).

The new pilot project took into account the demands of the union expressed during the 2011 strike. The labourers are hired by the ward committee, but become members of the union. The project employs six labourers and three or four local (lower) middle-class women to supervise and collect fees, which are managed by the councillor. All of the workers are paid INR 2500 – 3000 (USD 37.50 – 45) per month, get Sundays off and around 12 days of holidays in the year. While the union finds the wages low, they accept that the benefits of a newly created job outweigh the low pay. Moreover, these jobs do not result in the displacement of other labourers. Interestingly, the union did not seem to question or problematize the way

[7] We were unable to verify the political affiliation of the union involved in this strike.

that having middle-class women supervise and collect fees for the work of poor and low caste workers may serve to re-enforce broader hierarchies of power. Thus the actual labourers remain the marginalised actors within this arrangement.

Building community support: moral duties and hygienic citizens

In order to raise awareness and build community support, the bureaucrats and ward committee began by distributing an information pamphlet to all households, and convening a ward-level meeting to further disseminate this information. This meeting occurred prior to the researchers entering the field and thus we rely on the pamphlet as a key source of data on the local state discourse surrounding the project. The pamphlet employed multiple normative registers to request residents' co-operation in making the city "clean and free from garbage". One set of messages focussed on the bio-physical environment, asserting that garbage is the biggest environmental challenge because it causes "dangerous pollution" when it falls into rivers and ponds, and air pollution when it is burnt. A second set of messages focussed on moral responsibility to the poor. These highlight the health risks of unsegregated waste on "poor labourers" who collect recyclables in the street and at waste grounds and point out that user fees help poor families by providing income (Midnapore Municipality, 2013a). Within these messages one can see clear parallels with Foucault's (1980: 171-176) work on the creation of hygienic subjects as a programme of social control in 17th and 18th century Europe. He points to the way in which the technique of health assumed a place within the machinery of power. A concern with condition of the labour force led to the body being seen differently: the concern was no longer with numbers but utility and people become responsible for both their own health and that of others. This informed a regime of hygiene that entailed certain authoritarian interventions that re-shaped urban space itself and behaviour within it to support the health of the population. In contemporary urban India, Doran and Raja (2015:195) connect the "regime[s] of cleanliness and hygiene" to modern power structures and notions of proper versus 'deficient' citizenship.

In addition to the creation of hygienic subjects, these messages aim to form subjects concerned with the environment, a regime of power that Agrawal (2005: 166) has referred to as "environmentality". Hygienic subjects and environmental subjects are intertwined with concern for the bio-physical entity of the environment vis-à-vis "dangerous pollution" and the moral responsibility of households for the health of "poor labourers". The nature of this

particular project was amiable to the use of discourses of morality as a technique of power as the practices which contravened the desired order were distinguishable and open to stigmatization (Rattu, 2015: 81 - 83).

Within a third set of messages in the pamphlet the responsibilities of households as citizens and partners are evoked through assertions that the municipality is obligated to follow the Government of India scheme and "solve the problem of garbage". The pamphlet notes that the municipality will assume the responsibility for the infrastructure and "to give good service", however "small funds" would be needed from every household to assist with paying for the labour. The pamphlet further notes that people will also benefit from the improved cleanliness of the ward (Midnapore Municipality, 2013a). Thus in addition to the individual benefits, the pamphlet communicates notions of responsibility and obligation as moral citizens. Thus echoing in part discourses seen in the metropolises around the practices of 'legitimate' urban citizens (e.g: Bhan, 2009; Doron and Raja, 2015).

The ward committee reports that these awareness raising activities were not enough to convince all households. So as a secondary tactic the acting councillor and the ward committee secretary visited reluctant households and tried to convince them to participate. Following this, they say that only 5% of households remained uncooperative and stronger incentives were needed. Thus, Mr. Roy reported that he used his "power": when non-compliant households came to him needing assistance, in the form of a signature verifying identity, mediation with the municipality, or other tasks; he would "create pressure" and tell them "you didn't do our work, or follow our instructions of SWM project, so, why should we solve your [problem]". The ward committee members also evoked ideas of charitable obligation highlighting that monthly fees assisted eight or more families to live. While quickly acknowledging that this might not have been ethical, My Roy and a second committee member insist that they felt it was needed to ensure success. In recognising this ethical question, the councillor both acknowledged a particular normative register—one that suggests that state representatives should treat all people equally regardless, while also evoking a second normative register, what Olivier de Sardan (2014) characterised as a "practical norm", (the 'greater good') to justify his behaviour. This situated rationality, enacted through highly personalised relationships highlight the complexity of power

relationships that shape governance (Mosse, 2000; Osella and Osela, 2000). Mr Roy was particularly well situated to use these personalised relationships on one hand and his "power" on the other by the fact that he was (a) a long term resident and known to people, (b) vested with the formal power to acknowledge people and thus make them visible to the state and other institutions via his signature[8] and (c) his positionality as one who was not worried about "popularity" and had less motive to compromise in order to garner votes.

Examining the community implementation process brings to light the complex ways that power is enacted in the everyday. Mr Roy and the local bureaucrats utilise diverse strategies in order to shape behaviour. Discursive strategies aimed at creating environmental, hygienic and moral subjects seek to shape behaviours indirectly. Yet, these strategies are re-enforced with a more direct exercises of power when Mr Roy, in his role as state agent, refuses to recognise and "do work" for those who do not comply. In doing so he casts them as illegitimate citizens: who in failing to act in the prescribed way, also fail to qualify to be seen by the state (also: Doron and Raja, 2015). Such socio-political processes related to waste appear to shape and influence behaviours and politics beyond the handling of waste –further evidence in favour of a key tenant of the UPE that society and nature are co-produced in complex ways.

Experiencing segregation at source: the role of social pressures, waste imaginaries and class difference in shaping household participation

In February 2014 three groups of local women, each located in a different area of the ward,[9] were questioned about their perceptions of and participation in, the scheme. While most of the middle-class women stated they supported the project from the beginning, others acknowledged that they were initially reluctant. For one respondent in particular it was social pressure from her neighbours that motivated her to comply. These respondents agreed that when labourers collected the garbage daily, the pilot scheme was an improvement over the old system. However, as they needed to keep the pails in the house so that animals did not

[8] The councillor's signature to verify identity or provide a character referral is needed for broad range of administrative tasks in India.

[9] A poor and a middle-class area where the system was not functioning well and another middle-class area where the scheme was working.

scatter the garbage, they were unwilling to store organic waste for more than one day, as it made their houses dirty. Thus, when no workers come, they dumped the waste on the street.

In a poorer part of the ward, the respondents stated that while the workers insisted on segregation at the beginning of the project, they rarely did now and as such they did not participate. Conversely to the middle class experiences, these women suggested that they saw little improvement in local environmental conditions and they had little motive to continue with segregating their household waste.

The assessments by local households highlight three significant issues: the effect of social pressure on practice, the role of cultural conceptions of waste, and class-differentiated experiences of service delivery. As previously highlighted, social pressure has been a significant tactic in ensuring that people participate in the project. This pressure is applied by other residents, but also by those who represent state authority —the waste collectors who "protest" or "insist" on compliance. These processes are further indicative of the manner in which policy implementation has relied on the construction of a particular subject position to shape local conduct (Wan, 2015: 5). Compliance is ensured through a combination of different governmentalities. Recognising this highlights the pervasive ways that the (re)production of social-natural configurations is imbued with power (Heynen, 2003).

Through a UPE lens waste is a socio-natural hybrid, both environmental artefact and social relic (Parizeau, 2015, Hartmann, 2012). As such it is important to recognise that the construction of a hygienic governable subject position occurs within a context of broader cultural conceptions of waste and ideas about cleanliness. Perhaps most pertinent to the women's comments highlighted above and to similar practices observed elsewhere in West Bengal is the cultural and moral distinction between outside and inside. Traditionally, *inside*, understood as one's home, is a space of morality, purity and safety. Conversely the *outside*, which in the case of urban areas is outside of the house walls, is a space that caries fears of offence and ritual pollution. Therefore, the street has no moral obligation attached to it. Waste that is thrown outside of the house walls is "thrown over a conceptual boundary" (Chakrabarty, 1991; Kaviraj, 1997: 98). Thus while these women profess a desire for a clean local environment, what takes priority is a clean house, one which is not sullied by the smell

of organic waste that has begun to decompose (for similar findings in Brazil see Yates and Gutberlet, 2011).

Finally, the class-differentiated nature of service experiences deserve notice. Our survey results, drawn from other areas of the city, suggest that 31% of middle-class and 40% of lower-class residents throw their waste on irregular dumping grounds. Of those whose solid waste is collected by the municipality, 42% of middle-class respondents versus only 18% of poor respondents have some form of door-to-door collection of their waste. Unequal class-biased service delivery, regardless of private versus public responsibility, is consistent with the findings in the SWM literature (e.g: Baabereyir et al., 2012; Colon and Fawcett, 2006; Post et al., 2003). In the case of the pilot project area particular dynamics may exacerbate both the tendency towards unequal delivery and the increased reluctance of poor versus middle-class women to participate. While speculative, the differentiated user fees may serve as a disincentive to both the labourers and those who collect the fees, who may act in an economically rational way by prioritising higher fee paying households. Additionally, lower-class residents face larger space and time constraints vis-à-vis segregation and the storage of waste in the face of inconsistent service. The result is the reproduction of an uneven and unequitable urban environments within this ward, aptly highlighting what Zimmer (2010: 350) as characterised as the "plurality of Urban Political Ecologies" that constitute cities of the global South.

Conclusion

This paper represents a contribution to an emerging UPE of waste. Through an examination of a segregation-at-source policy, the study has sought to use waste as an entry point to "expose the processes that bring about highly uneven urban environments" (Swyngedouw and Heynen, 2003: 906). Following classical UPE perspectives, the initiation and implementation of a segregation-at-source pilot project in Medinipur, West Bengal has been examined with reference to the broader political economy of environmental governance in India and to the characteristics of waste as socio-natural artefact. Unlike classical UPE, however, we focused on the everyday practices of a wide range of political actors, including government officers at the state and municipal levels, ward representatives, labour unions and waste workers, to explore waste governance and the complex multi-scalar ways in which

power is enacted and (re)produced through urban natures. Unlike most UPE studies on waste, furthermore, this paper discussed a rather 'mundane' case of a SWM project that contributes to a certain extent to the production of uneven urban environments but not to glaring social and environmental injustices or to open conflict and opposition.

Our research has illuminated particular dynamics in the political economy of environmental governance in West Bengal and India. We demonstrate the relatively limited autonomy of local municipalities to make decisions on urban infrastructure and projects, in spite of significant statutory decentralisation. The discussed case study on SWM shows that state-level officials retain significant power over municipal actors. Yet, this power is wielded in complex ways, both through formal procedures but also through informal relational mechanisms, such as threats to cut funding. In small cities such as Medinipur, state actors at different levels of government seem particularly important for environmental governance as global and national capitalist interests and 'bourgeois' environmentalist activism are largely absent, unlike in India's metropolises. A complex array of bureaucratic and political (dis)incentives facilitate and obstruct the local implementation of national policies. A key dynamic highlighted by this case study is the role of local electoral politics. Governance decisions regarding SWM and the environment more generally can come at a political cost, even electoral defeat, which in the case of elected councillors in small-town India may imply a loss of livelihood. Considering these dilemmas between desired governance outcomes and electoral and livelihood success serves to avoid simplistic narratives of lacking political will. A time bound window of opportunity, when the SWM project could be taken out of the realm of electoral politics, due to the presence of a non-elected and cooperative councillor, coincided with the municipality coming under pressure from the state level. These conditions facilitated the implementation of the pilot project, in spite of the political disincentives at the local level and the general unpopularity of waste segregation at source in India. This finding points to a need to examine temporality in the study of the political economy of environmental governance.

Furthermore, this research confirms other UPE studies on waste regarding the importance of the materiality and hazardous character of waste to influence environmental governance. For example, the resistance of a local labour union to a previous SWM private-public partnership

was successful in part because they could mobilize the threat of uncollected garbage littering Medinipur's streets. In spite of this the waste workers as a group could only secure a subordinate labour position, as they acknowledged their relative powerlessness would hinder them to individually collect user fees from (relatively) more powerful households. The sociocultural associations of waste and caste-based concepts of purity seem to reinforce their marginal position. These socio-culture conceptions of waste from which people want distance both helped and hindered the municipality in creating hygienic and environmental subjects through discursive practices. Ironically, the segregation-at-source project in Medinipur has, at least in the short run, had more significant effects on the creation of more responsible and moral environmental subjects at the household level (mostly women) than on the natural environment per se, as (segregated) organic and non-organic waste is dumped together at the landfill. Generally, the study has shown how waste becomes enrolled in complex multi-scalar networks of power relationships between state and municipal officials, councillors and the electorate, waste workers, unions and households. This implies that waste has to be regarded as a constitutive part of broader strategies of governance, labour, and politics.

Finally, following the call of a situated UPE, these findings from a small city in the global south may contribute to theory-building or be used as heuristic tools for other studies.

The discursive strategies employed in a small pilot project in Medinipur show similarities in rhetoric, if not effect, with those found in Delhi and other large cities, although small cities are rarely the subject of the concentrated efforts of either environmentalists or the forces of capital and image building that shape urban natures. While not explicitly investigated by our project, this brings to the fore questions of how knowledge and the ways that ideas of legitimate citizenship and the (environmental) behaviours of these citizens, and of sustainability and urbanity become mobile and translated in more ordinary cities.

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